



# Air Force Research Laboratory|AFRL

*Science and Technology for Tomorrow's Air and Space Force*

## **Success Story**

### **AAW PROJECT WINS AWARD**



A team of AFRL, National Aeronautics and Space Administration (NASA), and Boeing engineers won the Turning Goals Into Reality Award in the Partnerships for National Security category for their active aeroelastic wing (AAW) project. NASA presents this award yearly to individuals or groups nationwide who made outstanding progress toward advancing aeronautics technology.



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### **Accomplishment**

The team is developing AAW technology for lighter-weight, flexible wings that use aerodynamically induced wing twist for aircraft maneuvering. The team characterized the wing's aeroelastic response in a round of flight tests, developed aerodynamic and load models of the wing based on flight data, and used these models to develop AAW control laws. The first AAW control laws were successfully demonstrated in flight December 2004 using a NASA F/A-18 flight test aircraft.

### **Background**

Today's aircraft wings aeroelastically warp or twist at very high speeds. Warping often has negative effects on aircraft roll performance; however, the AAW project will enable today's aircraft to use aeroelastic wing twist to their advantage. AAW wings provide large amounts of roll power using conventional control surfaces, while also controlling structural loads and reducing overall aircraft drag. AAW technology will enable thinner, higher aspect ratio wings, which can greatly reduce air vehicle weight and improve performance.

Air Vehicles  
Awards and Recognition

### **Additional Information**

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (05-VA-03)